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Retrograde Extrapolation Report

Report Date: June 06, 2022

Laboratory Case Number: 22-06576

Subject: Karen A Read

Report To: ADA Adam Lally, Norfolk County District Attorney's Office

Background:

The serum/plasma ethanol concentration obtained from the Good Samaritan Medical Center for Karen A Read was 93 mg/dL at 0908 hours on 1/29/2022 and time of the incident was 0045 hours on 1/29/2022. The ethanol result used in this retrograde extrapolation report was provided by an external party. The testing to obtain the ethanol result was not performed at the Massachusetts State Police Crime Laboratory and therefore this report does not fall under the laboratory's scope of accreditation.

A serum/plasma ethanol concentration of 93 mg/dL corresponds to a blood ethanol concentration (BAC) between 0.07 g% and 0.08 g% at 0908 hours on 1/29/2022. See the MSPCL serum/plasma report issued on 5/4/2022.

Calculations:

Possible BACs approximately 8.5 hours prior to the time of the test were calculated assuming different rates of elimination* of ethanol. Minimum and maximum BAC's 8.5 hours prior to the time of the test are calculated as follows:

Minimum BAC: A possible minimum level is calculated by multiplying the lowest elimination rate* (0.010 g% per hour) by the time interval (8.5 hours) minus two hours. This two hour allowance is to account for the uncertainties associated with the drinking history of the subject prior to the time interval. The resulting number is added to the lowest BAC at the time of the hospital test.

$$0.07 \text{ g\%} + ((0.010 \text{ g\% / hour}) \times 6.50000) = 0.135 \text{ g\%}$$

Maximum BAC: A possible maximum level is calculated by multiplying the highest elimination rate* (0.025 g% per hour) by the time interval (8.5 hours) and adding the resulting number to the highest BAC at the time of the hospital test. This calculation assumes that the subject's BAC had peaked at or prior to the start of the time interval (0045 hours) indicating that the subject had consumed no ethanol 0.5 to 1.5 hours prior to the time interval.

$$0.08 \text{ g\%} + ((0.025 \text{ g\% / hour}) \times 8.5) = 0.292 \text{ g\%}$$

Therefore, based on the information provided and these calculations, the subject's BAC could be between 0.13 g% and 0.29 g% at 0045 hours on 1/29/2022.

These calculations were performed by the author of this report on 6/6/2022.

* The rates of elimination chosen for the above calculations (0.010 g%/h and 0.025 g%/h) represent, respectively, "low" and "high" values based on published studies in the scientific community. These rates serve to indicate an established range of experimentally determined ethanol elimination rates, however may not account for all individuals.

This report reflects the test results, conclusions, interpretations, and/or the findings of the analyst as indicated by the signature below. Reported results relate only to the items tested, sampled, certified, calibrated, or data processed. Information regarding any items which the laboratory collected or created and preserved for future testing is available upon request.



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This report was electronically signed using password protected software.